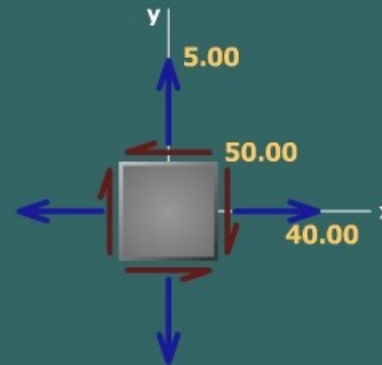One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.
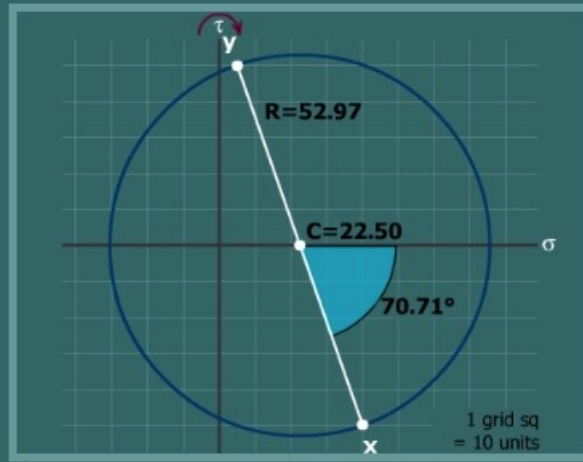
Q1

$$\sigma_{ave} = \frac{40 + 5}{2} = 22.5$$

$$x - axis = (\sigma_x, \tau_{xy}) = (40, -50)$$

y
5.00
50.00
40.00
x

Mohr's circle A

τ
y
R=52.97
C=22.50
σ
70.71°
x
1 grid sq = 10 units

Mohr's circle B

τ
x
70.71°
C=22.50
σ
R=52.97
v
1 grid sq = 10 units

Mohr's circle C

τ
x
65.77°
C=17.50
σ
R=54.83
y
1 grid sq = 10 units

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.
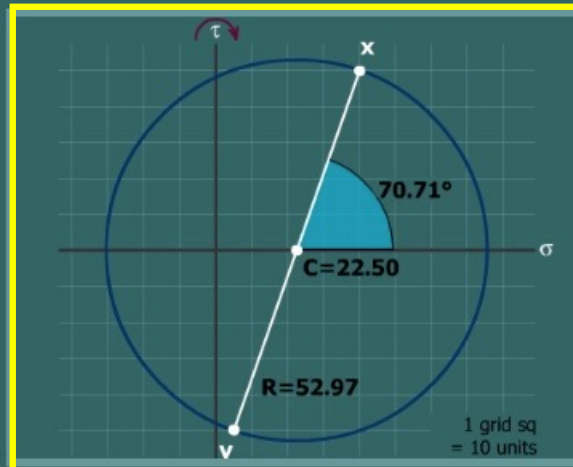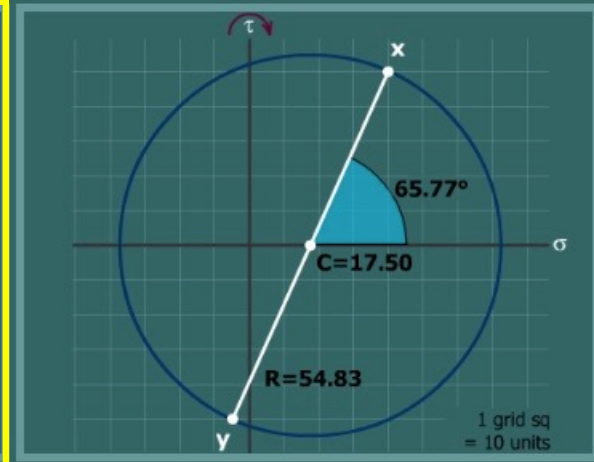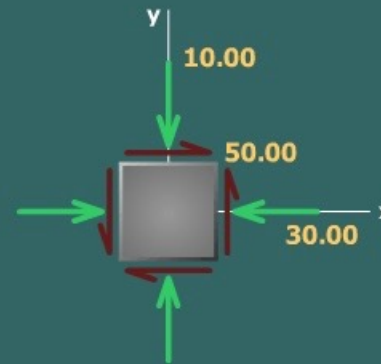
Q2

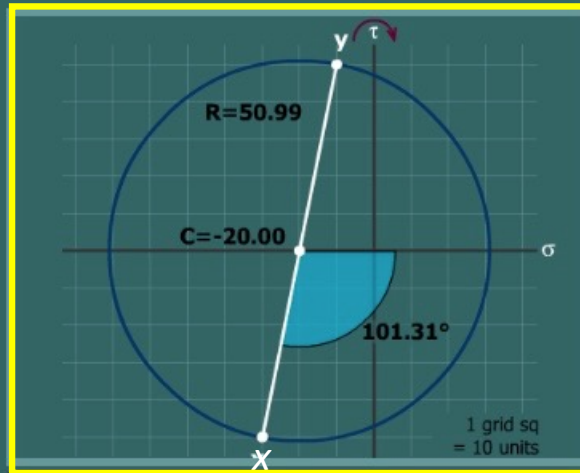$$\sigma_{ave} = \frac{-30 - 10}{2} = -20$$

$$x - axis = (\sigma_x, \tau_{xy}) = (-30,50)$$

y
10.00
50.00
x
30.00

Mohr's circle A

R=50.99

C=-20.00

σ

101.31°

1 grid sq = 10 units

Mohr's circle B

R=53.85

C=-10.00

σ

111.80°

1 grid sq = 10 units

Mohr's circle C

R=50.99

C=20.00

σ

78.69°

1 grid sq = 10 units

One of the Mohr's circles shown is correct for the state of stress depicted on the stress element. Click on the correct Mohr's circle.
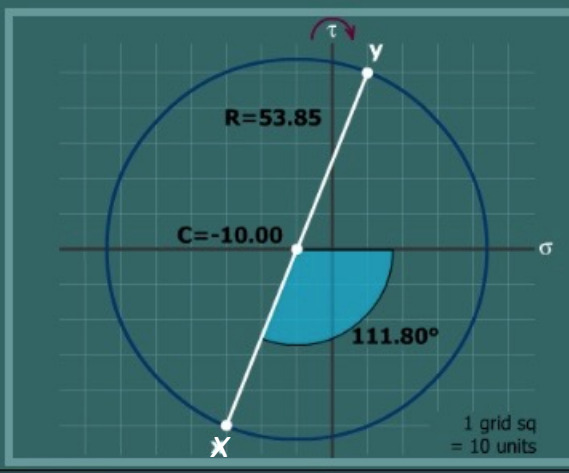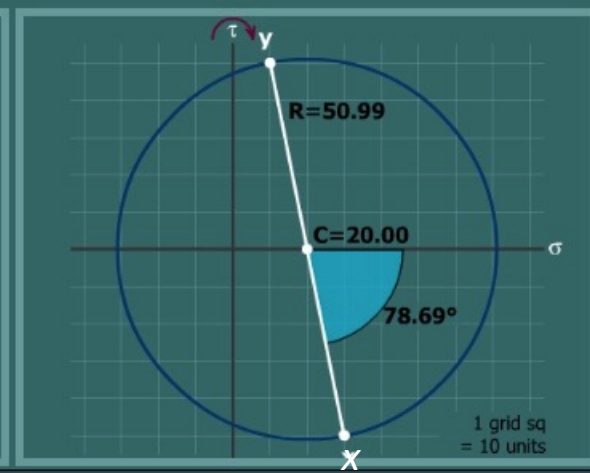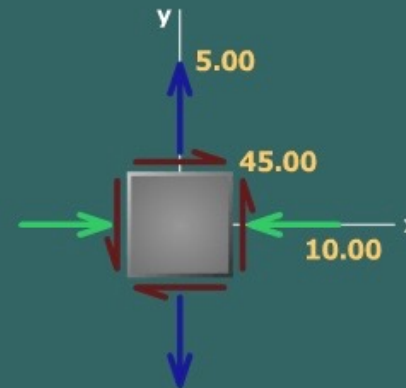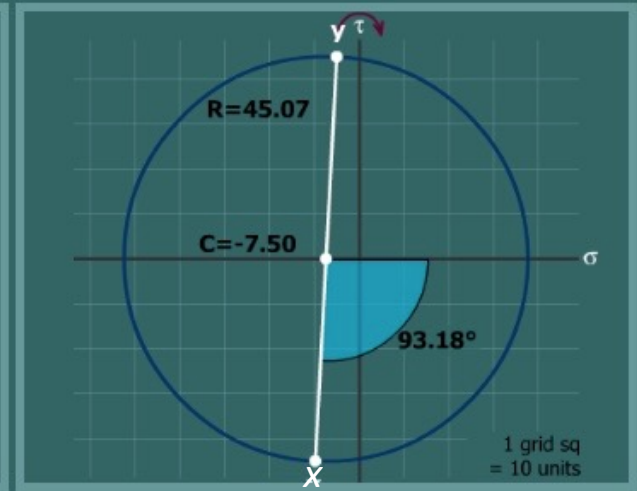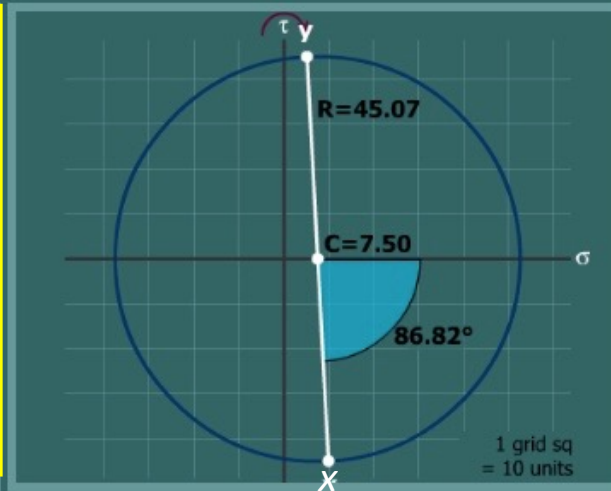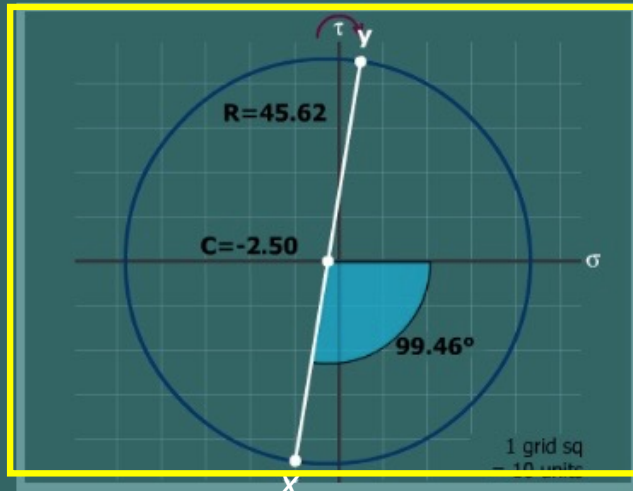
Q3

$$\sigma_{ave} = \frac{-10 + 5}{2} = -2.5$$

$$x - axis = (\sigma_x, \tau_{xy}) = (-10, 45)$$

5.00

45.00

10.00

Mohr's circle A

R=45.62

C=-2.50

σ

99.46°

1 grid sq
= 10 units

Mohr's circle B

R=45.07

C=7.50

σ

86.82°

1 grid sq
= 10 units

Mohr's circle C

R=45.07

C=-7.50

σ

93.18°

1 grid sq
= 10 units

9:30

One of the stress elements shown is correct for this Mohr's circle. Click on the correct stress element.
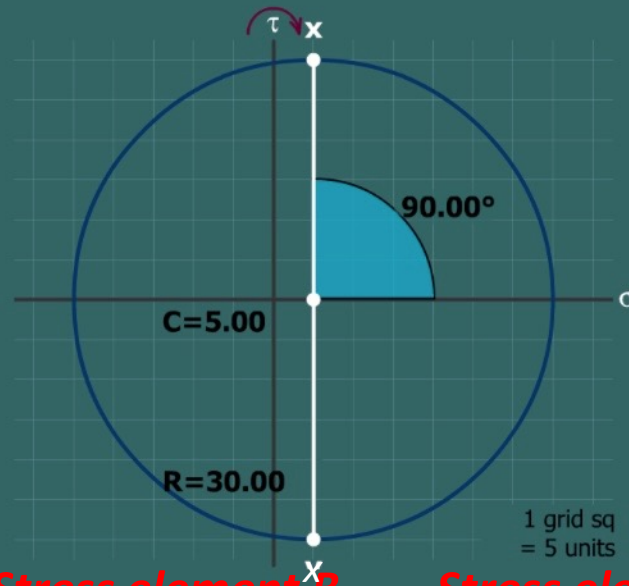
Q4

A: $\sigma_{ave} = \frac{-5-5}{2} = -5$
$x - axis = (\sigma_x, \tau_{xy}) = (-5, -30)$

B: $\sigma_{ave} = \frac{5+5}{2} = 5$
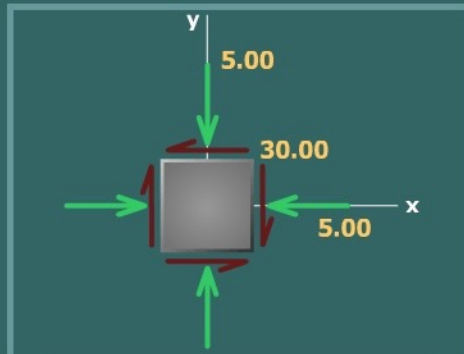$x - axis = (\sigma_x, \tau_{xy}) = (5, -30)$

C: $\sigma_{ave} = \frac{5-5}{2} = 0$
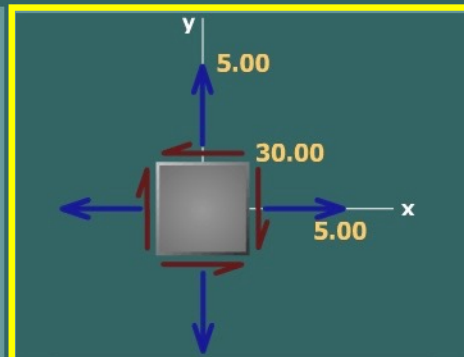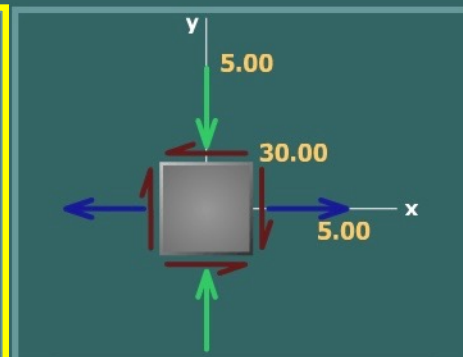$x - axis = (\sigma_x, \tau_{xy}) = (5, -30)$

τ **x**

90.00°

C=5.00

σ

R=30.00

1 grid sq = 5 units

x

Stress element A

Stress element B

Stress element C

y
5.00
30.00
5.00
x

y
5.00
30.00
5.00
x

y
5.00
30.00
5.00
x

One of the stress elements shown is correct for this Mohr's circle. Click on the correct stress element.
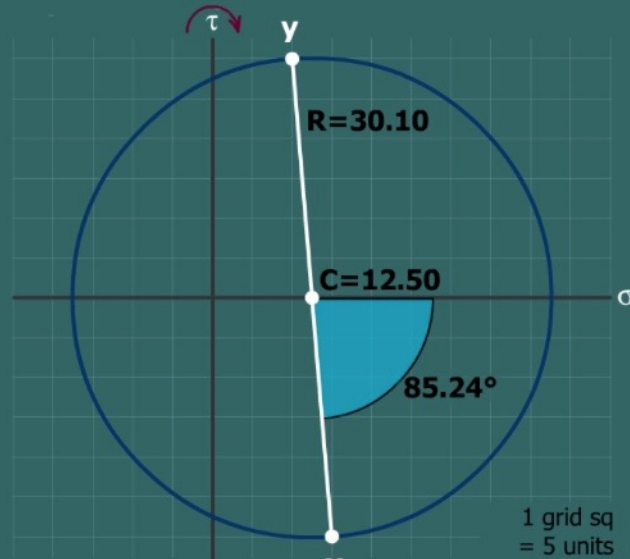
Q5

A: $\sigma_{ave} = \frac{15-10}{2} = -2.5$
$x - axis = (\sigma_x, \tau_{xy}) = (15, -30)$

B: $\sigma_{ave} = \frac{10+15}{2} = 12.5$
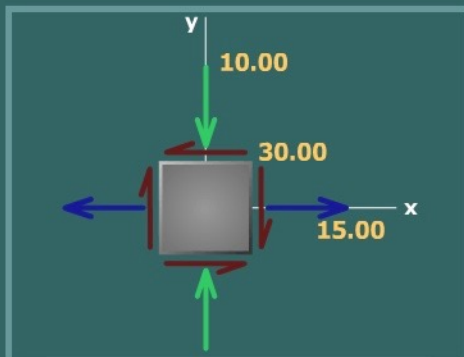$x - axis = (\sigma_x, \tau_{xy}) = (10, 30)$

C: $\sigma_{ave} = \frac{10+15}{2} = 12.5$
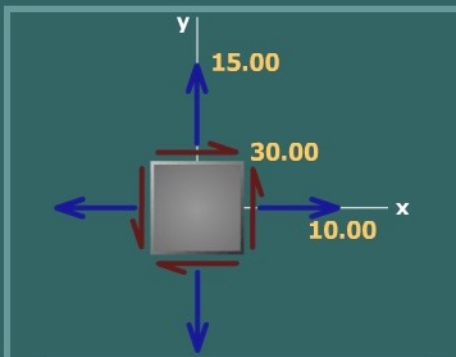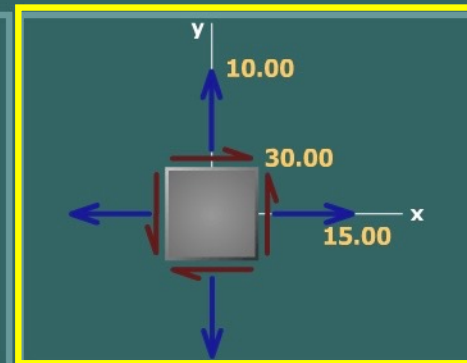$x - axis = (\sigma_x, \tau_{xy}) = (15, 30)$

τ y

R=30.10

C=12.50

σ

85.24°

1 grid sq
= 5 units

x

Stress element A

y

10.00

30.00

15.00

x

Stress element B

y

15.00

30.00

10.00

x

Stress element C

y

10.00

30.00

15.00

x

One of the stress elements shown is correct for this Mohr's circle. Click on the correct stress element.
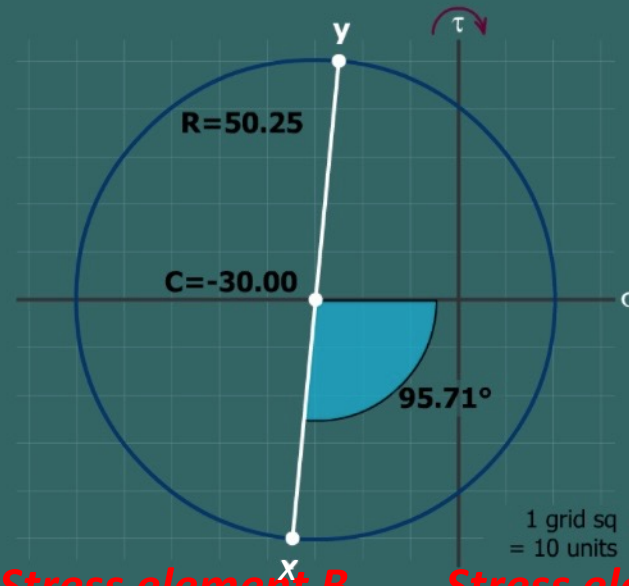
Q6

A: $\sigma_{ave} = \frac{25+35}{2} = 30$
$x - axis = (\sigma_x, \tau_{xy}) = (35,50)$

B: $\sigma_{ave} = \frac{-25-5}{2} = -30$
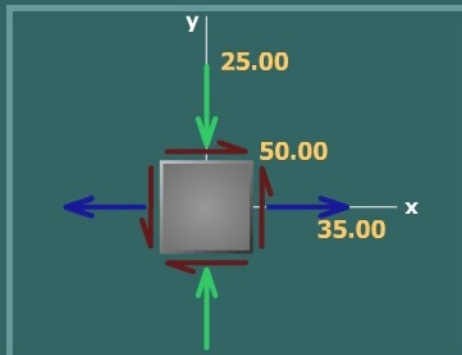$x - axis = (\sigma_x, \tau_{xy}) = (-25,50)$

C: $\sigma_{ave} = \frac{-35-25}{2} = -30$
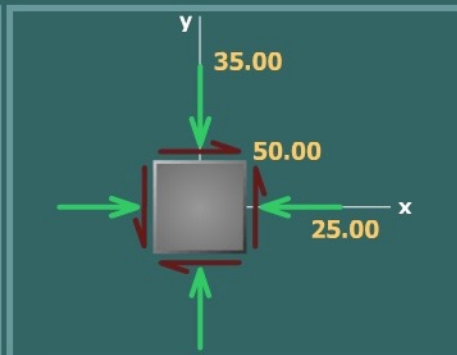$x - axis = (\sigma_x, \tau_{xy}) = (-35,50)$

y

τ

R=50.25

C=-30.00

σ

95.71°

X

1 grid sq = 10 units

Stress element A

y
25.00
50.00
x
35.00

Stress element B

y
35.00
50.00
x
25.00

Stress element C

y
25.00
50.00
x
35.00